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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/433,705	11/04/1999	SHUNPEI YAMAZAKI	0756-2062	2883

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EXAMINER

LOKE, STEVEN HO YIN

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 01/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/433,705	YAMAZAKI, SHUNPEI	
	Examiner	Art Unit	
	Steven Loke	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-45 is/are pending in the application.
- 4a) Of the above claim(s) 18-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3, 6-8</u> | 6) <input checked="" type="checkbox"/> Other: See <i>Continuation Sheet</i> . |

Continuation of Attachment(s) 6). Other: PTO-1449, Paper Nos. 11, 12, 14.

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1. Claims 18-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 15.
2. Newly submitted claims 42-45 are directed to the non-elected species of the invention. Claims 42-44 are directed to a CMOSFET, classified in class 257, subclass 369. Claim 45 is directed to an electroluminescence display device, classified in class 257, subclass 72.

Since applicant has elected the species related to a MOSFET, claims 42-45 are withdrawn from consideration as being directed to a non-elected species.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

5. The disclosure is objected to because of the following informalities:

In page 4, lines 22-23, it is unclear whether fig. 9 discloses the TFT of the 5th embodiment.

There is no reference numeral 126 (page 14, line 6) in fig. 4A.

Appropriate correction is required.

6. Figures 34A to 34H should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed

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drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. Claim 13 is objected to because of the following informalities: lines 10-11, "a second electrode" is unclear whether it is being referred to "a second gate electrode". Appropriate correction is required.

8. Claims 13-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Fig. 2C discloses the first impurity region [124] and the second impurity region [126] are formed under the first gate electrode. The specification never discloses the first impurity region is overlapped with the taper portion of the first gate electrode and the second impurity region is overlapped with neither the first gate electrode nor the second gate electrode as claimed in claim 13.

The written description never discloses the second gate electrode can be made of an n-type silicon containing phosphorus and silicide as claimed in claim 16.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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10. Claims 13, 15 and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Troxell et al.

In regards to claim 13, Troxell et al. shows all the elements of the claimed invention in figs. 1 and 2. It is a semiconductor device, comprises: a first thin film transistor comprising: a semiconductor island [20] on an insulating surface; a channel region [100] in the semiconductor island; at least an LDD region [102] being contact with the channel region and including a first impurity region and a second impurity region, said first impurity region being in contact with the channel region and said second impurity region being in contact with the first impurity region; at least a third impurity region being in contact with the second impurity region; a gate electrode [32, 40] being formed over the semiconductor island with a gate insulating film [28] interposed therebetween and having a first gate electrode [32] and a second gate electrode [40] being formed on the first gate electrode, wherein the first gate electrode [32] has at least a taper portion and a flat portion, wherein the first impurity region is overlapped by the taper portion of the first gate electrode [32] with the gate insulating film [28] interposed therebetween, wherein the second impurity region is overlapped by neither the first gate electrode [32] nor the second gate electrode [40].

In regards to claim 15, Troxell et al. further discloses the semiconductor island [20] is a crystalline silicon island.

In regards to claim 16, Troxell et al. further discloses the first gate electrode includes an n-type silicon containing phosphorus while the second gate electrode [40] includes aluminum.

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11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Troxell et al.

In regards to claim 17, it would have been obvious for the semiconductor device is one of the devices as claimed in claim 17 because they are conventional display devices that include a thin film transistor.

13. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Troxell et al. in view of Maddox, III.

Troxell et al. differs from the claimed invention by not showing the taper portion of the first gate electrode and the gate insulating film is in a range of 3 to 60 degrees.

Maddox, III discloses the taper portion of the gate electrode and the gate insulating film is less than 60 degrees in fig. 2.

Since both Troxell et al. and Maddox, III teach a thin film transistor having a tapered gate electrode, it would have been obvious to have the tapered gate electrode of Maddox, III in Troxell et al. because it minimizes the problem of punchthrough in the thin film transistor.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (703) 308-4920. The examiner can normally be reached on 7:50 am to 5:20 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sl
January 27, 2002

A handwritten signature in cursive script, appearing to read "Steven Lake".